Most reports of cryptosporidium enteritis have described an association with the acquired immune deficiency syndrome and a limitation to the gastrointestinal tract. Subsequently the disease has occurred in patients with a normal immune system and in other organs, suggesting possible haematogenous spread.

This patient presented with typical gastroenteritis except for the severity of the abdominal pain. Cryptosporidium causes more intense abdominal pain than *Giardia lamblia*, and cramps are more common.[5] Although our patient may be an isolated example, we wonder whether some infected patients who complain of severe pain may be suffering from acute pancreatitis. We suggest therefore that cryptosporidium may be an additional aetiological factor in the cause of acute pancreatitis.

We thank Dr S Reilly and Dr P J Wilkinson, Derriford Hospital, Plymouth, and Mr D Casemore, Rhyl Public Health Laboratory.

1 Jokipii L, Pohjola S, Jokipii AMM. Cryptosporidium: a frequent finding in patients with gastrointestinal symptoms. *Lancet* 1983:ii;358-61.
2 Forgacs P, Tarshis A, Ma P, *et al.* Intestinal and bronchial cryptosporidodiosis in an immunodeficient homosexual man. *Ann Intern Med* 1983;**99**:793-4.
3 Pitlik SD, Faundstein V, Guarda L, *et al.* Human cryptosporidiosis spectrum of disease. *Arch Intern Med* 1983;**143**:2269-7.
4 Kocoshis SA, Cibull ML, Davies TE, *et al.* Intestinal and pulmonary cryptosporidiosis in an infant with severe combined immune deficiency. *J Pediatr Gastroenterol Nutr* 1984;3:149-57.
5 Casemore DP, Sands RL, Curry A. Cryptosporidium species: a "new" human pathogen. *J Clin Pathol* 1985;**38**:1321-36.

(Accepted 13 October 1986)

Derriford Hospital, Plymouth PL6 8DH
S P HAWKINS, MB, BS, house officer
R P THOMAS, FIMLS, senior medical laboratory scientific officer
C TEASDALE, MS, FRCS, consultant surgeon

Correspondence to: Dr S P Hawkins, Department of Geriatric Medicine, St Woolos Hospital, Newport, Gwent NP9 4SZ.

Isolation of human immunodeficiency virus from synovial fluid of a patient with reactive arthritis

With the increasing prevalence of the acquired immune deficiency syndrome (AIDS) and seropositivity to human immunodeficiency virus (HIV) health workers need to be cautious in handling body fluids. We report on a patient in whom HIV was isolated from synovial fluid aspirated from a knee joint.

Case report

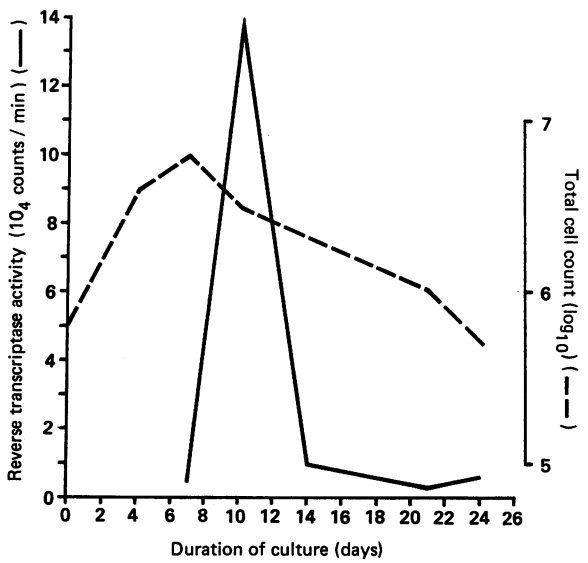
A 37 year old homosexual man presented with a four day history of profuse watery diarrhoea followed, after seven days, by migratory joint pains. On admission he was feverish (temperature 37·8°C) and had appreciably reduced neck movements, bilateral knee effusions, and tender wrists. On investigation his haemoglobin concentration was 116 g/l, white cell count 5·9×10 g/l, and C reactive protein concentration 66 mg/l (normal <5 mg/l). Routine blood, stool, and urine cultures yielded negative results, as did a test for hepatitis B surface antigen and a Monospot test. Antibodies to *Chlamydia trachomatis* were not found. IgG antibody to HIV was detected by enzyme linked immunosorbent assay and indirect membrane immunofluorescence in serum obtained one week before his admission to hospital. A subsequent sample was shown to contain IgG and IgM antibodies by indirect membrane immunofluorescence. Antibody to *Salmonella paratyphi* was present at a titre of 1/640. The erythrocyte sedimentation rate before admission was 64 mm in the first hour. x Ray pictures were normal. Synovial fluid aspirated from the right knee was mildly cloudy and straw coloured. It contained IgG but not IgM antibody to HIV.

Isolation of virus—The virus was isolated by two culture methods: a small volume of synovial aspirate (A) was cocultured with normal peripheral blood lymphocytes stimulated by phytohaemagglutinin, the ratio of synovial cells to lymphocytes being 1:3[1]; and a second culture (B) was established with Hut 78 cells. Viral growth was detected by observation of cytopathic effects, immunofluorescence, and reverse transcriptase assays.[2] After 11 days infectious retrovirus was identified in culture A by a peak in particle associated reverse transcriptase activity in the supernatant fluid (figure). Synctial formation was noted in culture B after 20 days, and four days later viral antigens were detected by indirect membrane immunofluorescence.

The patient was treated with bed rest, anti-inflammatory drugs, and a continuing course of tetracycline. He had an intermittent fever at night, and 10 days later lymph nodes in both axillas and inguinal regions were palpable. His joint symptoms had improved before his discharge from hospital.

Comment

Although no retrovirus has been implicated in the pathogenesis of arthritis in man, a member of the same subfamily as HIV, caprine arthritis encephalitis virus, causes arthritis in goats.[3] Though patients with AIDS commonly complain of arthralgia, arthropathy has not been described; in this case there was no direct evidence that HIV was the cause of the arthritis. Possibly our patient was suffering from a reactive arthritis and lymphocytes invading the inflamed knee joint were infected with HIV. The clinical presentation of the joint manifestations was not, however, typical of a reactive arthritis: the pronounced neck stiffness and tenderness of the cervical spine on palpation and thereafter were unusual. The lack of stiffness



Reverse transcriptase activity in cultured synovial aspirate, and total cell count.

on neck flexion and the relative lack of tenderness associated with lymphadenopathy further supported the diagnosis of arthritis affecting the cervical spine. Whether HIV can cause arthritis must, we believe, remain an open question.

The isolation of HIV from synovial fluid is important for those dealing with patients suffering from reactive arthritides of whatever cause. It re-emphasises the need to apply safety precautions whenever exposure to body fluid is likely, and it raises the question whether it is appropriate to use intra-articular steroids in patients who are positive for antibody to HIV.

We thank Drs J P Getchell and D R Hicks and Ms J L Heath for the Hut 78 subclone (6D5); Dr V S Kalyanaraman for the CDC 451 virus isolate; Dr B Thomas for undertaking the microimmunofluorescence test to detect antibodies to *Chlamydia trachomatis*; and Miss D Gor for technical help.

1 Wofsy CB, Cohen JB, Hauer LT, *et al.* Isolation of AIDS-associated retrovirus from genital secretions of women with antibodies to the virus. *Lancet* 1986;i:527-9.
2 Hoffman AD, Banapour B, Levy JA. Characterisation of the AIDS associated retrovirus reverse transcriptase and optimal conditions for its detection in virions. *Virology* 1985;147:326-35.
3 Crawford TB, Adams DS, Cheevers WP, Cork LC. Chronic arthritis in goats caused by a retrovirus. *Science* 1980;**207**:997-9.

(Accepted 22 October 1986)

St Mary's Hospital, London W2
ROBIN H WITHRINGTON, BA, MRCP, senior registrar, department of rheumatology
PAUL CORNES, BA, BM, senior house officer, department of rheumatology
J R WILLIE HARRIS, BM, FRCP, consultant physician, Praed Street clinic
MARTIN H SEIFERT, MB, FRCP, consultant physician, department of rheumatology

St Mary's Hospital Medical School, London W2
ELEANOR BERRIE, PHD, postdoctoral research worker, Jefferiss research wing
DAVID TAYLOR-ROBINSON, MD, FRCPATH, director of Jefferiss research wing
DONALD J JEFFRIES, MB, FRCPATH, consultant virologist, department of virology

Correspondence to: Dr Seifert.